Docket/App No.: 1440.1027-005

Title: Anti-Angiogenic Proteins and Fragments and Methods of

ventors: Raghuram Kalluri

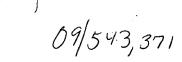


FIG. 1A

pET22b(+) forward primer:

5'-CGGGATCCT TCT GTT GAT CAC GGC TTC-3' (SEQ ID NO:3)

pET22b(+) reverse primer:

5'-CCCAAGCTT TGT TCT CAT ACA GAC-3' (SEQ ID NO:4)

pPICZαA forward primer:

5'-TTCGGAATTC TCT GTT GAT CAC GGC TTC-3' (SEQ ID NO:15)

pPICZαA reverse primer:

5'-TGCTCTAGAGG TGT TCT TCT CAT ACA GAC TTG GCA-3' (SEQ ID NO:16)

5	10	15	20	25	. 30	35	40	45
tct gtt	gat cad	<u>gac</u> tt	<u>c</u> ctt	gtg ac	c agg	cat ag	it caa ac	a ata
50	55	60	65	70	75	8.0	, o=	0.0
gat gac	cca cag	g tgt co	t tot	ggg ac	c aaa	att ct	t tac ca	c ada
95	100	105	110	115	120	125	120	125
tac tct	ttg ctc	tac gt	g caa	ggc aat	gaa	cgg gc	c cat gg	a caq
140	145	150	155	160	165	170	175	100
gac ttg	ggc acg	gcc gg	c agc	tgc ctc	g cgc	aag tt	c agc aca	ata
185	190	195	200				220	
ccc ttc	ctg ttc	tgc aa	t att	aac aac	: ata	tac aa	· 220 c ttt gca	225
230	235	240	_	250				
cga aat			tga	ctarted	255 acc	cct da	265 g ccc ato	270
275	280	285	.290	295				
atg tca			z acq	ada daa	300	305	310 a cca ttt	315
320	325	330	335					
				340	345	350	355 gatg gcc	360
365	370							gtg
				385	390	395	400	405
410	475					ccc ago	ggg tgg	tcc
	415		425	430	435	440	445	450
455					atg	cac acc	agc gct	ggt
			470	475	480	485	490	495
ged gdd	990 000						tcc tgc	ctg
500	505	510	515	520	525	530	535	540
gag gag	ill aga	agt gcg	cca	ttc atc	gag	tgt cac	ggc cgt	ggg
	550		560	565	570	575	580	585
acc tgc a	aat tac	tac gca	aac	gct tac	agc t	ttt tgg	ctc gcc	acc
590	595	600	605	610	615	620	625	C20
ata gag a	agg agc	gag atg	ttc a	aag aag	cct a	acg ccg	tcc acc	ttg
635	640	645	650	655	660	665	C70	C7.
aag gca g	ggg gag	ctg cgc	acg`d	cac gtc	agc c	gc <u>tac</u>	caa qtc	tqt
680	685	690						
<u>atg aga a</u>	aga aca	taa (S	EQ ID	NO:1)				
				*				

Docket/App No.: 1440.1027-005

Title: Anti-Angiogenic Proteins and Fragments and Methods of the Thereof

hventors: Raghuram Kalluri

FIG. 1B

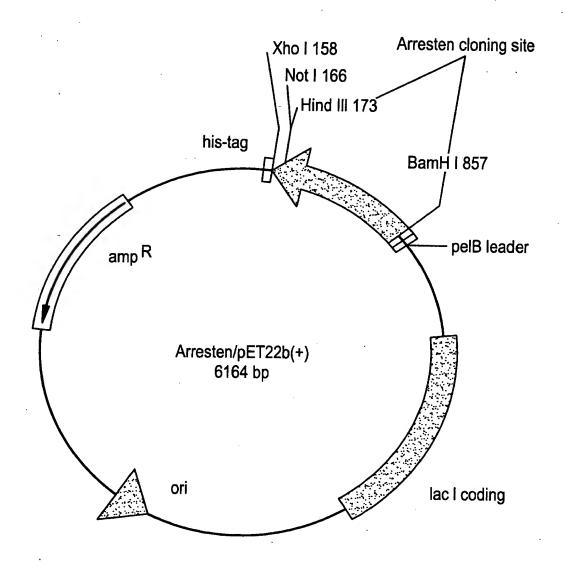
SVD HGF LVT RHS QTI DDP QCP SGT KIL YHG YSL LYV QGN ERA HGQ 60. DLG TAG SCL RKF STM PFL FCN INN VCN FAS RND YSY WLS TPE PMP MSM API TGE NIR PFI SRC AVC EAP AMV MAV HSQ TIQ IPP CPS GWS 150. SLW IGY SFV MHT SAG AEG SGQ ALA SPG SCL EEF RSA PFI ECH GRG TCN YYA NAY SFW LAT IER SEM FKK PTP STL KAG ELR THV SRC QVC MRR T

(SEQ ID NO:2)

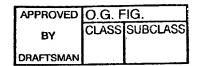
Docket/App No.: 1440.1027-005

Pie: Anti-Angiogenic Proteins and Fragments and Methods of Usa entors: Raghuram Kalluri

FIG. 2

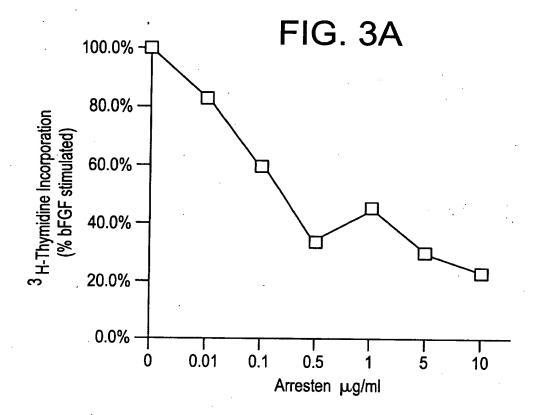


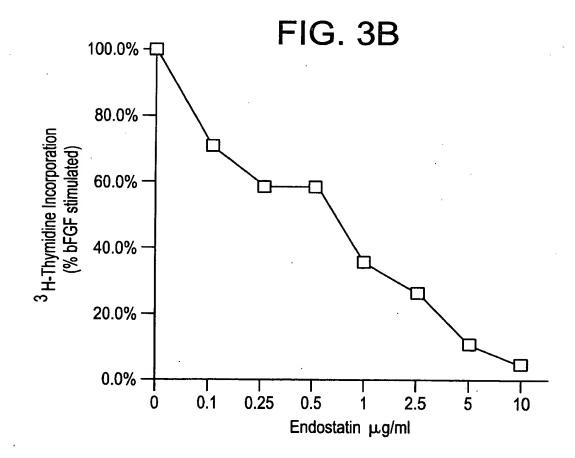
Forward primer: 5'-cgggatccttctgttgatcacggcttc-3' Reverse primer: 5'-cccaagctttgttcttctcatacagac-3'



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Title: Anti-Angiogenic Proteins and Fragments and Methods of the Thereof





	O.G. FIG.			
BY	CLASS	SUBCLASS		
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Title: Anti-Angiogenic Proteins and Fragments and Methor

Inventors: Raghuram Kalluri

FIG. 4A

Use Thereof

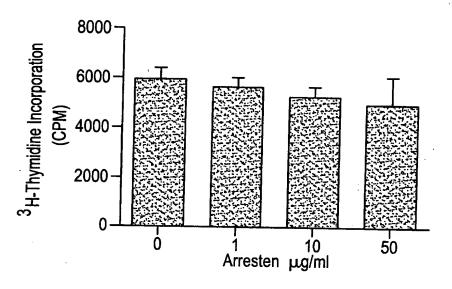
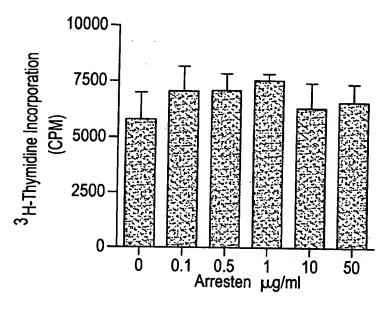


FIG. 4B



APPROVED	O.G. FIG.		
BY	CLASS	SUBCLASS	
DRAFTSMAN			

Title: Anti-Angiogenic Proteins and Fragments and Methods of Use Thereof

FIG. 4C

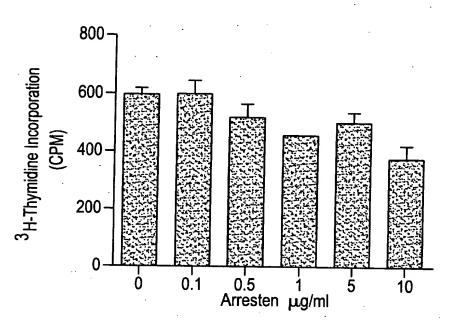
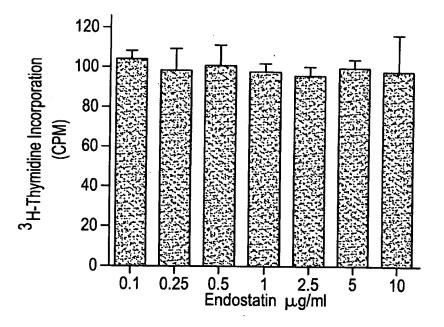


FIG. 4D



	O.G. FIG.		
BY	CLASS SUBCLASS		
DRAFTSMAN			

Title: Anti-Angiogenic Proteins and Fragments and Methods of Use Thereof

Inventors: Raghuram Kalluri

FIG. 5A

Control

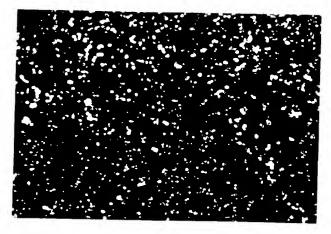


FIG. 5B

Arresten 2 μg/ml

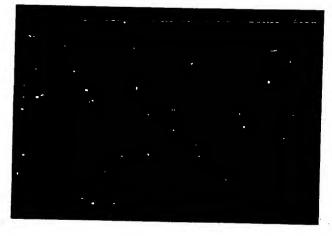
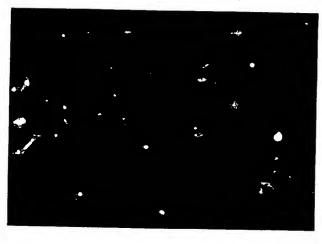


FIG. 5C

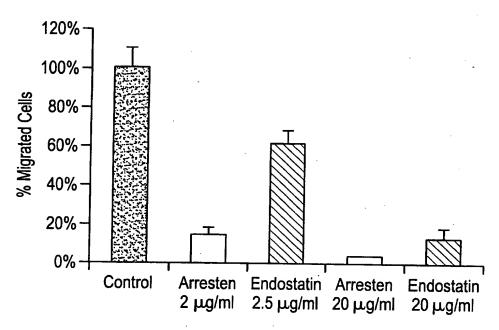
Endostatin 20 μg/ml

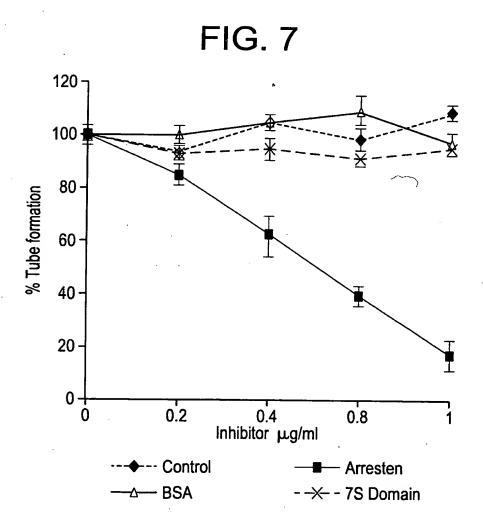


Docket/App No.: 1440.1027-005

Title: Anti-Angiogenic Proteins and Fragments and Methods of U

FIG. 6





APPROVED	O.G. FIG.	
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DRAFTSMAN		

Title: Anti-Angiogenic Proteins and Fragments and Methods of the The

FIG. 8A

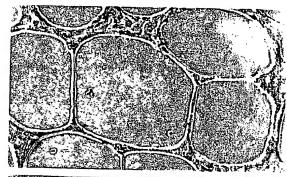
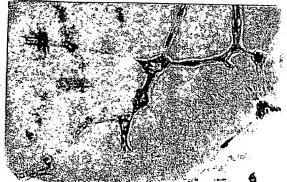
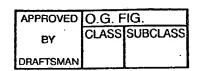


FIG. 8B

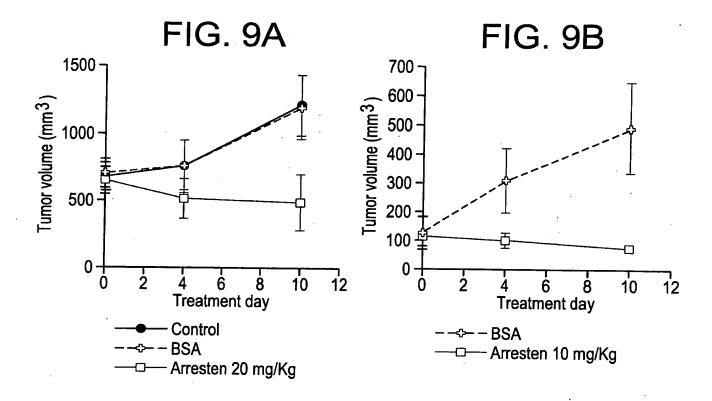


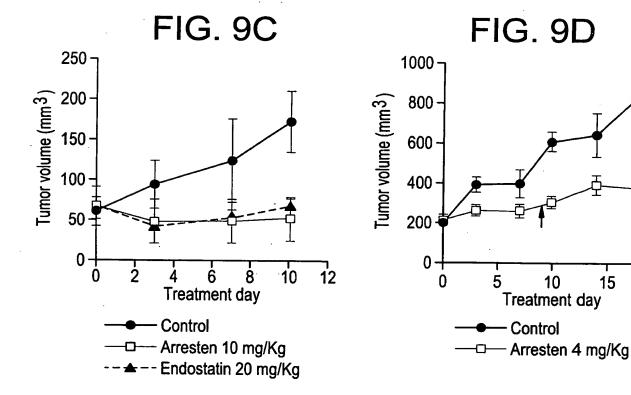


1440.1027-005 Docket/App No.:

Title: Anti-Angiogenic Proteins and Fragments and Methods of Use Thereof

entors: Raghuram Kalluri





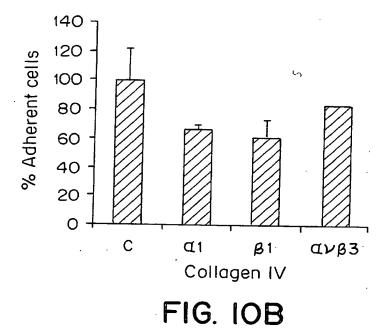
15

20

APPROVED	O.G. FIG.		
BY	CLASS	SUBCLASS	
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Title: Anti-Angiogenic Proteins and Fragments and Methods of Use Thereof Inventors: Raghuram Kalluri

FIG. IOA



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Title: Anti-Angiogenic Proteins and Fragments and Methods of Use Thereof

Inventors: Raghuram Kalluri

FIG. 11A

pET22b(+) forward primer:

5'-CGGGATCCT GTC AGC ATC GGC TAC CTC-3' (SEQ ID NO:7)

pET22b(+) reverse primer:

5'-CCCAAGCTT CAG GTT CTT CAT GCA CAC-3' (SEQ ID NO:8)

pPICZαA forward primer:

5'-TTCGGAATTC <u>GTC AGC ATC GGC TAC CTC CTG</u>-3' (SEQ ID NO:17) pPICZαA reverse primer:

5'-GGGGTACCCC CAG GTT CTT CAT GCA CAC CTG G-3' (SEQ ID NO:18)

gtc agc atc ggc tac ctc ctg gtg aag cac agc cag acg gac cag gag ccc atg tgc ccg gtg ggc atg aac aaa ctc tgg agt gga tac age etg etg tae tte gag gge eag gag aag geg eac aac eag gae ctg ggg ctg gcg ggc tcc tgc ctg gcg cgg ttc agc acc atg ccc ttc ctg tac tgc aac cct ggt gat gtc tgc tac tat gcc agc cgg aac gac aag tee tac tgg ete tet ace act geg eeg etg eec atg atg ccc gtg gcc gag gac gag atc aag ccc tac atc agc cgc tgt 3,30 tot gtg tgt gag gcc ccg gcc atc gcc atc gcg gtc cac agt cag gat gtc tcc atc cca cac tgc cca gct ggg tgg cgg agt ttg tgg atc gga tat tcc ttc ctc atg cac acg gcg gcg gga gac gaa ggc 4.70 ggt ggc caa tca ctg gtg tca ccg ggc agc tgt cta gag gac ttc cgc gcc aca cca ttc atc gaa tgc aat gga ggc cgc ggc acc tgc cac tac tac gcc aac aag tac agc ttc tgg ctg acc acc att ccc gag cag age tte cag gge teg eee tee gee gae acg ete aag gcc gge etc atc ege aca cac atc age ege tge cag gtg tge atg aag <u>aac ctq</u> tga (SEQ ID NO:5)

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Title: Anti-Angiogenic Proteins and Fragments and Methods of Use Thereof

nventors: Raghuram Kalluri

FIG. 11B

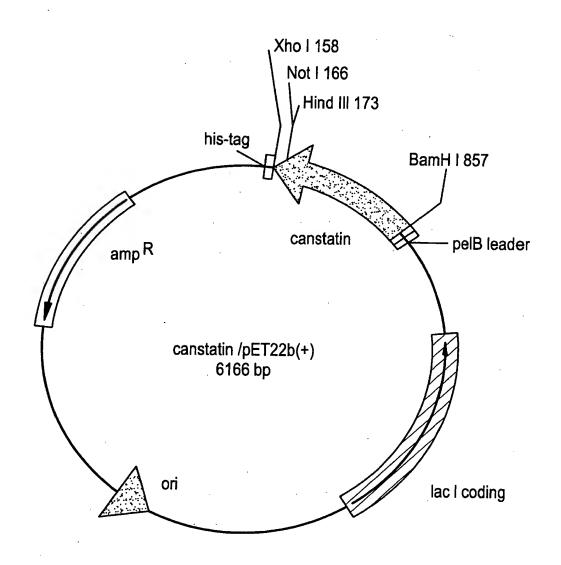
VSI GYL LVK HSQ TDQ EPM CPV GMN KLW SGY SLL YFE GQE KAH NQD LGL AGS CLA RFS TMP FLY CNP GDV CYY ASR NDK SYW LST TAP LPM . 110 MPV AED EIK PYI SRC SVC EAP AIA IAV HSQ DVS IPH CPA GWR SLW IGY SFL MHT AAG DEG GGQ SLV SPG SCL EDF RAT PFI ECN GGR GTC HYY ANK YSF WLT TIP EQS FQG SPS ADT LKA GLI RTH ISR CQV CMK (SEQ ID NO:6) NL

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Title: Anti-Angiogenic Proteins and Fragments and Methods of Use Thereof

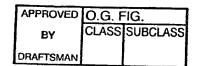
Inventors: Raghuram Kalluri

FIG. 12



Forward primer: 5'-cgggatcctgtcagcatcggctacctc-3'

Reverse primer: 5'-cccaagcttcaggttcttcatgcacac-3'

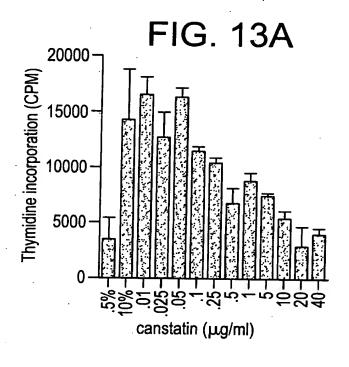


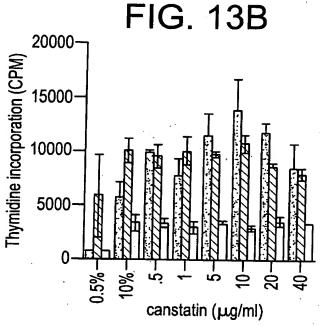
1440.1027-005 Docket/App No.:

Title: Anti-Angiogenic Proteins and Fragments and Methods of Use Thereof

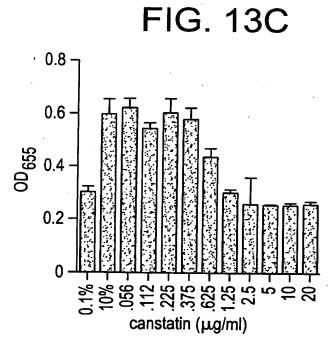
ventors: Raghuram Kalluri

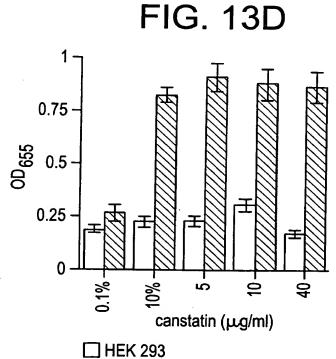






786-0 ☑ PC-3 ☐ HEK 293





☑ PC-3

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Title: Anti-Angiogenic Proteins and Fragments and Methods of les Thereof

FIG. 14

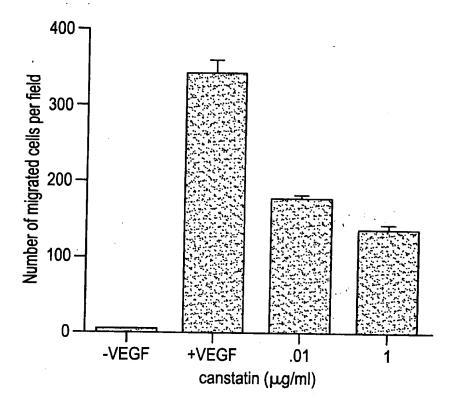
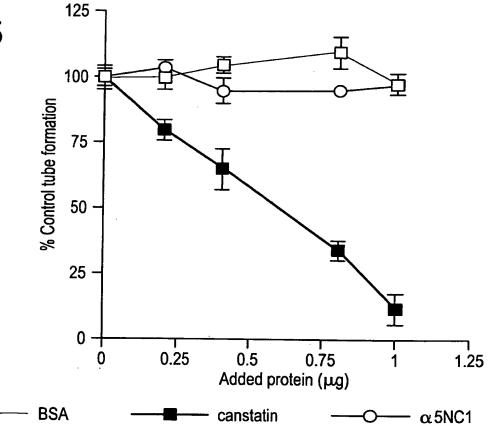
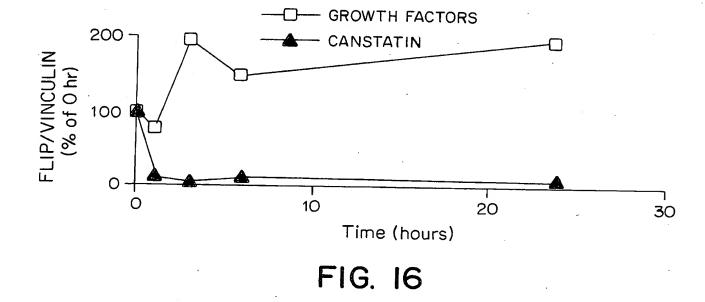


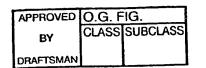
FIG. 15



APPROVED	O.G. FIG.		
BY	CLASS SUBCLASS		
DRAFTSMAN			

Title: Anti-Angiogenic Proteins and Fragments and Methods of Use Thereof





Title: Anti-Angiogenic Proteins and Fragments and Methods of Use Thereof

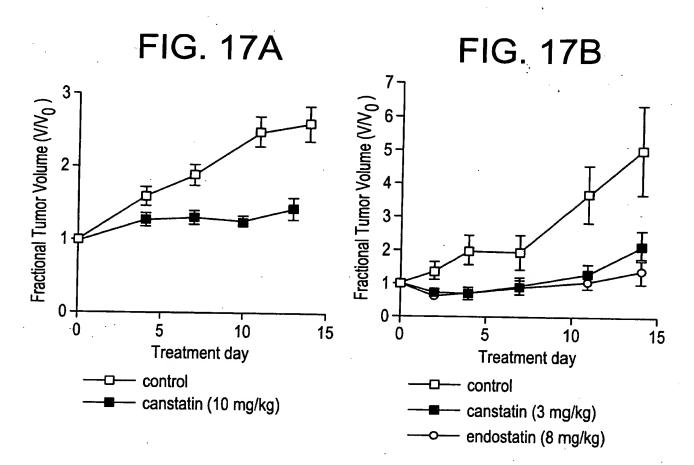


FIG. 17C FIG. 17D 1500 -400 1250 Tumor volume (mm^3) Tumor volume (mm³) 300 1000 200 750 100 500 0 250 0 2.5 7.5 5 10 12.5 10 15 0 Treatment day Treatment day control control canstatin (10 mg/kg) canstatin (10 mg/kg)

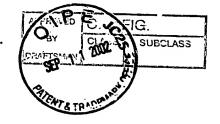


FIG. 18A

pET22b(+) forward primer:

5'-CGG GAT CCG <u>GGT TTG AAA GGA AAA CGT</u>-3' (SEQ ID NO:11) pET22b(+) reverse primer:

5'-CCC AAG CTT TCA GTG TCT TTT CTT CAT-3' (SEQ ID NO:12)

5 10 ggt ttg aaa gga	15 20 <u>aaa cgt</u> gga	25 gac agt	30 gga t	35 ca cct	40 gca acc	45 tgg
50 55 aca acg aga ggc	60 65 ttt gtc ttc		75 cac a	80 gt caa	85 acc aca	90 gca
95 100 att cct tca tgt	105 110 cca gag ggg			125 tc tac	130 agt ggg	135 ttt
140 145 tot ttt ott ttt		160 aat caa	165 cga g		175 gga caa	180 gac
185 190 ctt gga act ctt			210 cga t			225 cca
230 235 ttc tta ttc tgc		250 gat gta			265 gca tct	270 cga
275 280 aat gat tat tca	285 290 tac tgg ctg	295 tca aca	300 cca g	305 ct ctg	310 atg cca	315 atg
320 325 aac atg gct ccc	330 335 att act ggc	340 aga gcc		350 ag cct	355 tat ata	360 agc
365 370 aga tgc act gtt	375 380 tgt gaa ggt			395 cc ata		405 cac
410 415 agc caa acc act		430 cca tgt			445 tgg att	450 tct
455 460 ctc tgg aaa gga		475 atc atg			490 gca ggt	495 tct
500 505 gag ggc acc ggg	510 515 caa gca ctg	520 gcc tcc	525 cct g	530 gc tcc	535 tgc ctg	540 gaa
545 550 gaa ttc cga gcc	555 560 agc cca ttt	565 cta gaa	570 tgt c	575 at gga	580 aga gga	585 acg
590 595 tgc aac tac tat		610 tac agt			625 gct tca	630 tta
635 640 aac'cca gaa aga		655 aag cct		665 ca tca	670 act gtg	675 aaa
680 685 gct ggg gaa tta		700 ata agt		710 gt cag	715 gtg tgc	720 <u>atg</u>
725 730 aag aaa aga cac	735 <u>tga</u> (SEC) ID NO:9)				

pET22b-α3(IV) NC1 = nucleotides 1 through 732 Tumstatin 333 = nucleotides 1 through 372 Tumstatin 334 - nucleotide 373 through 732

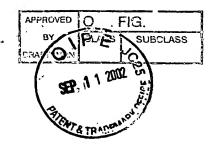


FIG. 18B

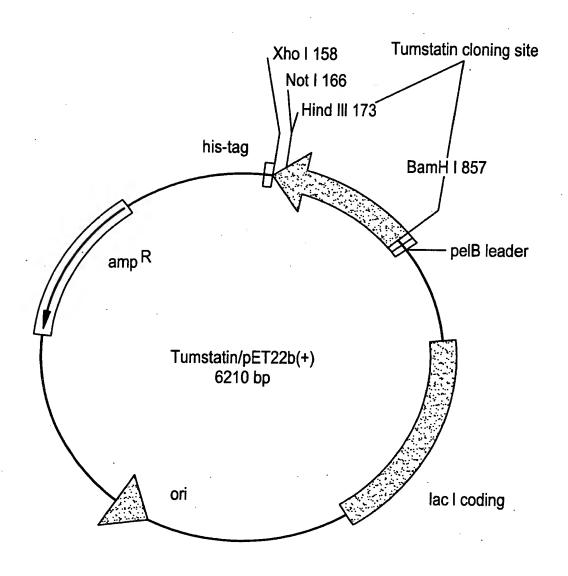
GLK GKR GDS GSP ATW TTR GFV FTR HSQ TTA IPS CPE GTV PLY SGF SFL FVQ GNQ RAH GQD LGT LGS CLQ RFT TMP FLF CNV NDV CNF ASR NDY SYW LST PAL MPM NMA PIT GRA LEP YIS RCT VCE GPA IAI AVH SQT TDI PPC PHG WIS LWK GFS FIM FTS AGS EGT GQA LAS PGS CLE EFR ASP FLE CHG RGT CNY YSN SYS FWL ASL NPE RMF RKP IPS TVK AGE LEK IIS RCQ VCM KKR H (SEQ ID NO:10)

pET22b α3(IV) NC1 = residues 1 through 244 Tumstatin 333 = residues 1 through 124 Tumstatin 334 = residues 125 through 244

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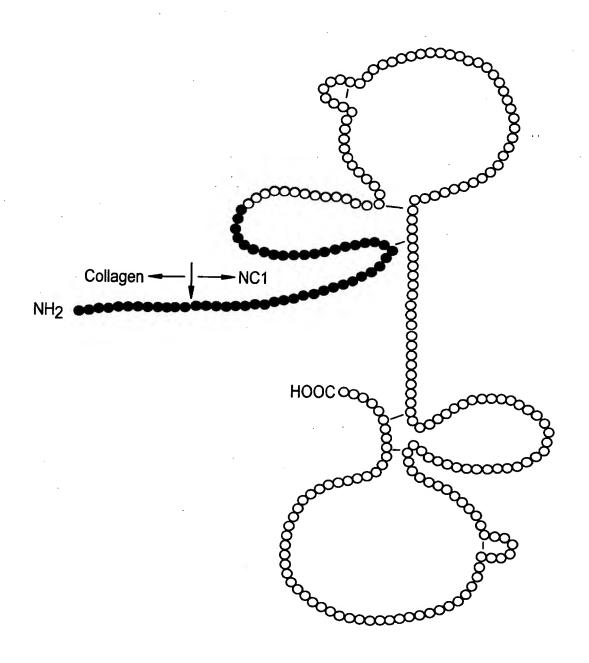
FIG. 19



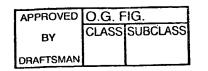
Docket/App No.: 1440.1027-005

Title: Anti-Angiogenic Proteins and Fragments and Methods

FIG. 20



APPROVED O.G. FIG. BY CLASS SUBCLASS DRAFTSMAN	Docket/App No.: 1440.1027-005 Title: Anti-Angiogenic Proteins and Fragments and Methods: Use Thereof Inventors: Raghuram Kalluri	
	Incorporation of (³ H)-thymidine (CPM) Sign HBS Sign HBS Sign HBS Lumstatin (Lig/ml)	
	Incorporation of [3H]-thymidine (CPM) PG. 21B 0.1% FBS 20% FBS 20% FBS 1	
	Incorporation of [3H]-thymidine (CPM) O.1% FBS 20% FBS 20% TBS Lumstatin (µg/ml)	



Title: Anti-Angiogenic Proteins and Fragments and Methods

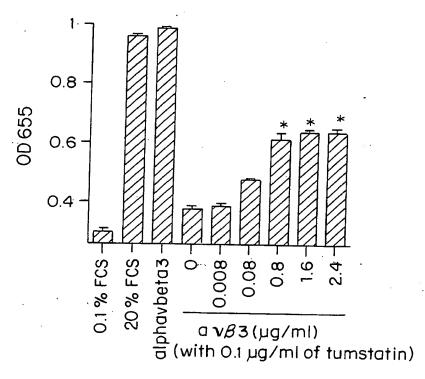


FIG. 22

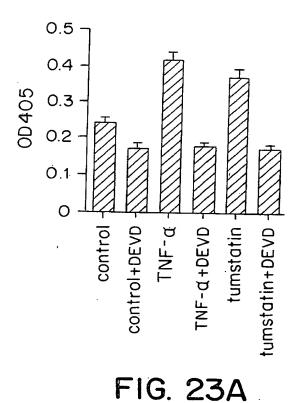
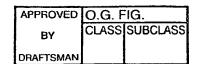


FIG. 23B



Title: Anti-Angiogenic Proteins and Fragments and Methods

e Thereof

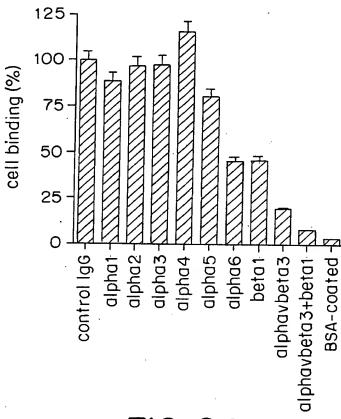


FIG. 24A

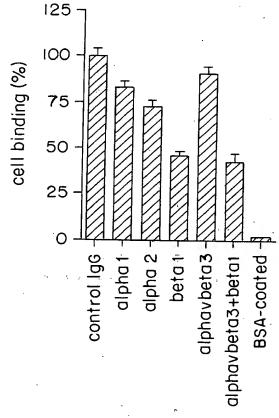
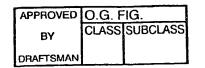


FIG. 24B



Title: Anti-Angiogenic Proteins and Fragments and Methods of

ventors: Raghuram Kalluri

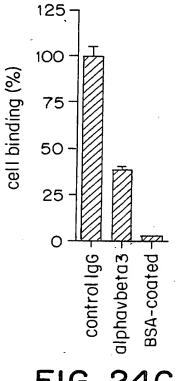
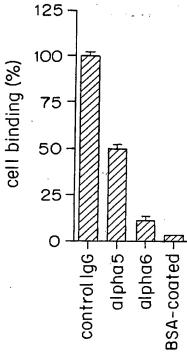
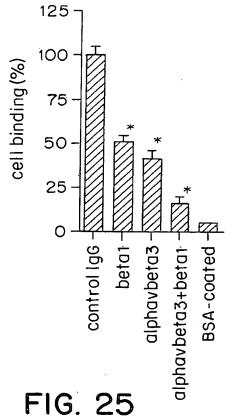


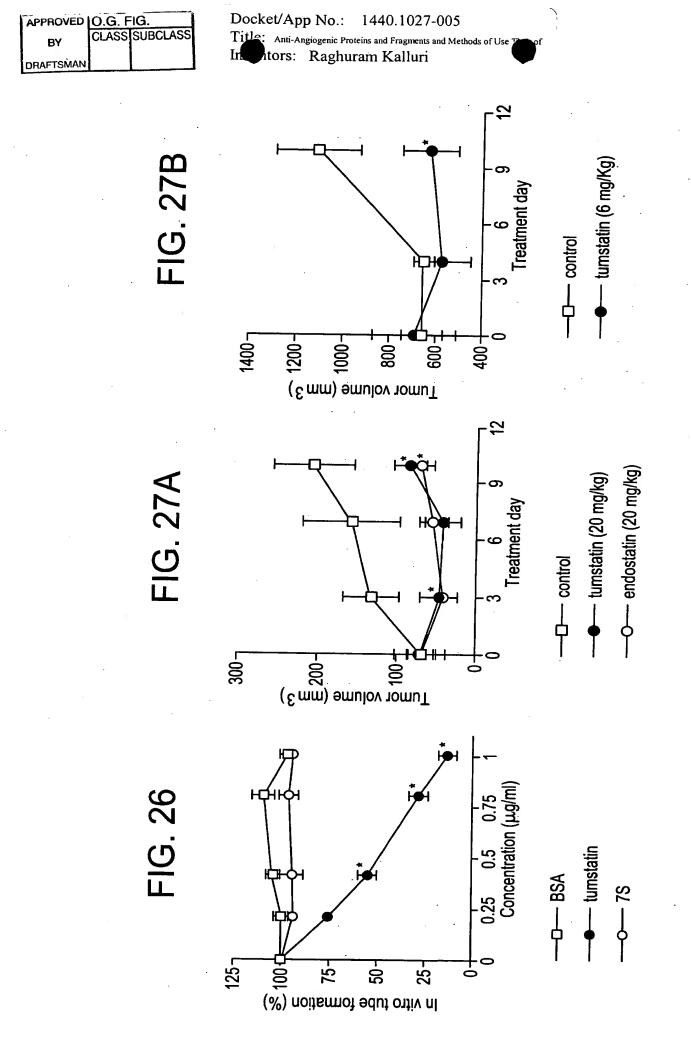
FIG. 24C



Thereof

FIG. 24D

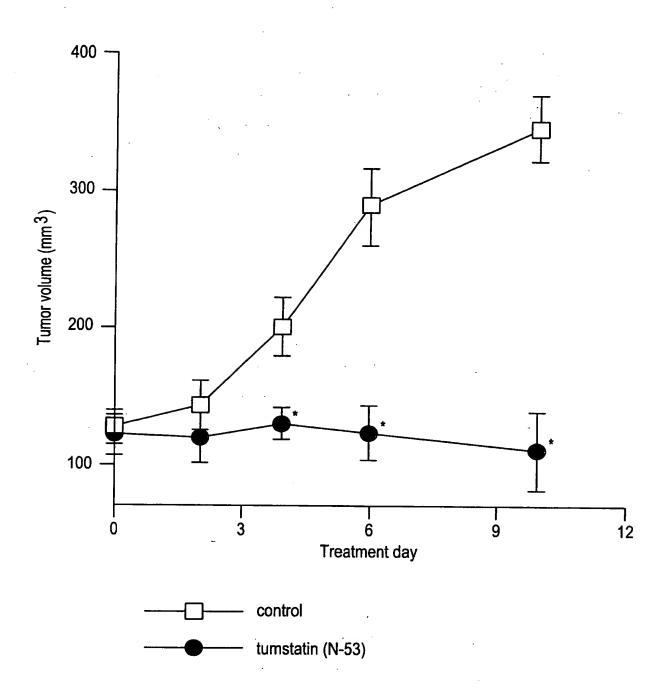




Docket/App No.: 1440.1027-005

Title: Anti-Angiogenic Proteins and Fragments and Methods of Use Thereof

FIG. 28



	O.G. FIG.		
ВУ	CLASS SUBCLAS		
DRAFTSMAN			

Title: Anti-Angiogenic Proteins and Fragments and Methods of Use Thereof

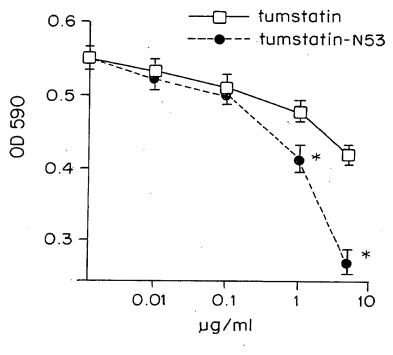
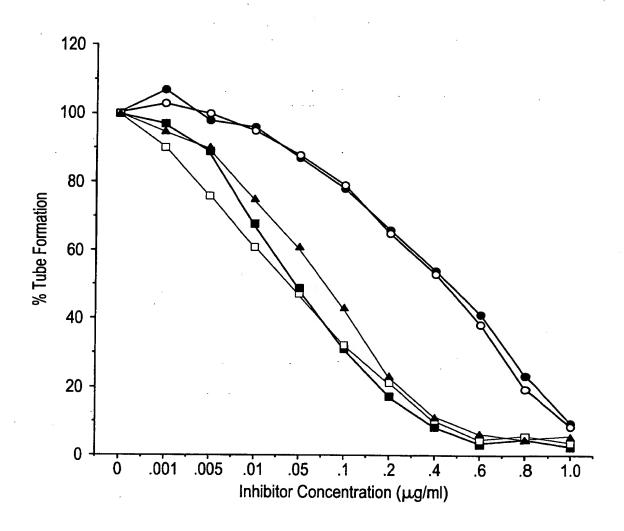


FIG. 29

Docket/App No.: 1440.1027-005

Title: Anti-Angiogenic Proteins and Fragments and Methodos Use Thereof

FIG. 30

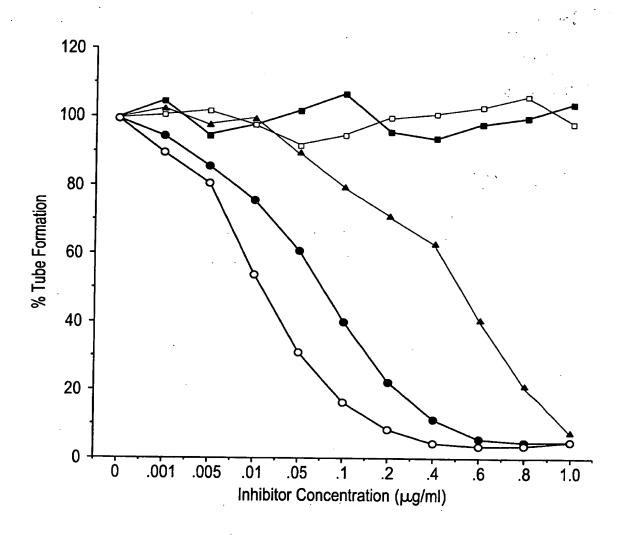


- --- Arresten
- —o— Canstatin
- = 12 kDa fragment of Arresten
- —□— 8 kDa fragment of Arresten
- → 10 kDa fragment of Canstatin

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FIG. 31



- ── Tumstatin Fragment 333
- —o— Tumstatin Fragment 334
- ── BSA
- --- α6
- --- Tumstatin

	O.G. FIG.		
BY	CLASS SUBCLAS		
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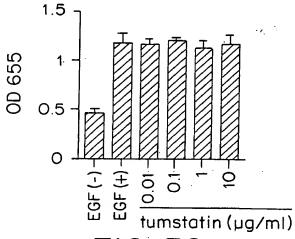


FIG. 32A

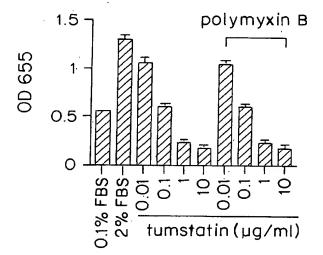


FIG. 32B

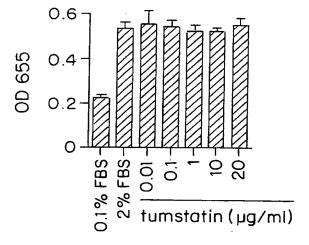
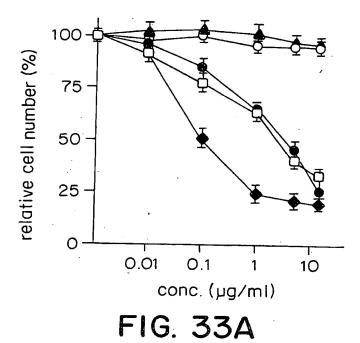


FIG. 32C

APPROVED	O.G. FIG.		
BY	CLASS	SUBCLASS	
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Title: Anti-Angiogenic Proteins and Fragments and Methods of Use Thereof



(%) 75- 100 mp/ml) FIG. 33B

APPROVED	O.G. FIG.		
BY	CLASS	SUBCLASS	
DRAFTSMAN			

Title: Anti-Angiogenic Proteins and Fragments and Methods

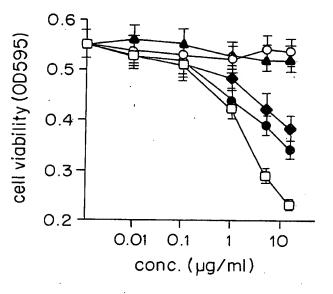
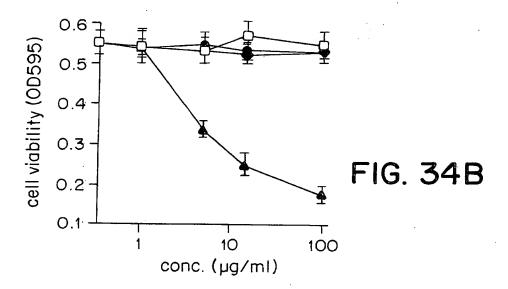
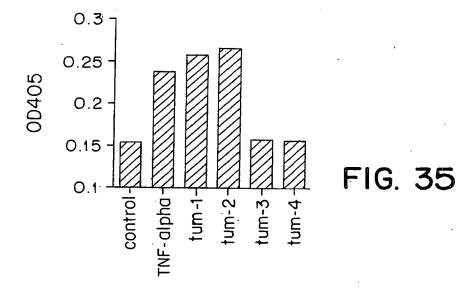
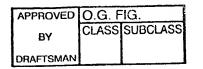


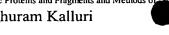
FIG. 34A

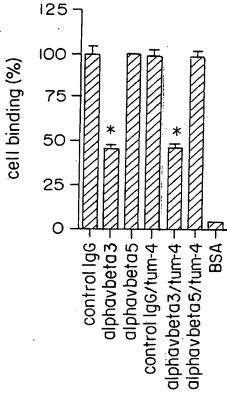






Title: Anti-Angiogenic Proteins and Fragments and Methods of the Thereof





cell binding (%)

control lg6
diphavbeta3
alphavbeta5
BSA

FIG. 36B

FIG. 36A

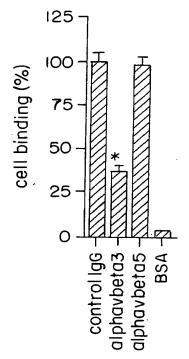


FIG. 36C

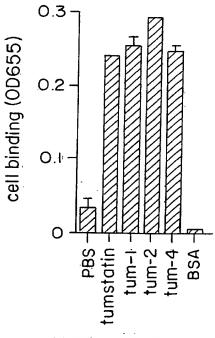
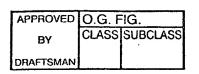


FIG. 37



Title: Anti-Angiogenic Proteins and Fragments and Methods

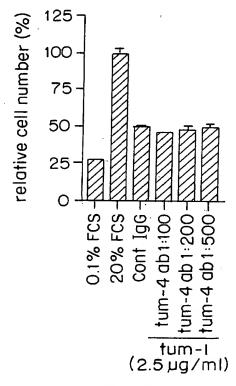


FIG. 38A

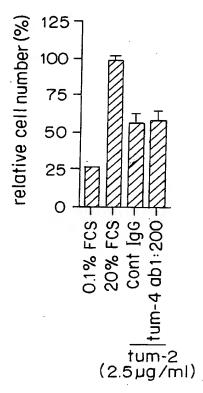


FIG. 38B

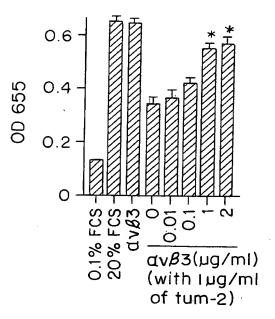


FIG. 38C

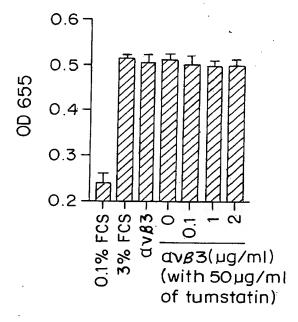


FIG. 38D

APPROVED	O.G. FIG.		
ВУ	CLASS	SUBCLASS	
DRAFTSMAN			

Title: Anti-Angiogenic Proteins and Fragments and Methods of See Thereof

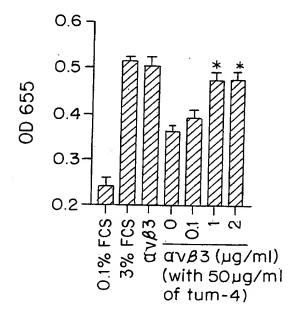


FIG. 38E

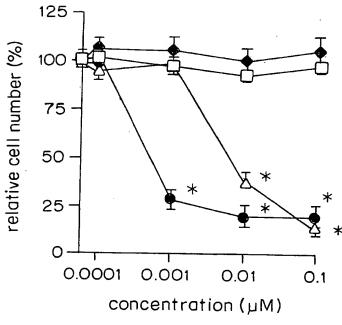
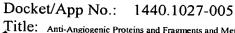
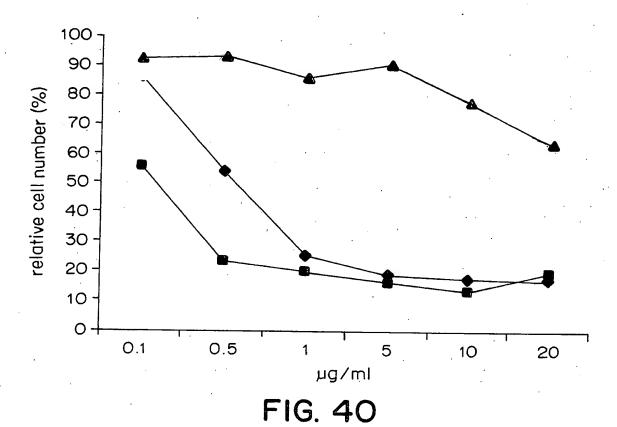


FIG. 39

APPROVED O.G. FIG.					
ву	CLASS	SUBCLASS			
DRAFTSMAN					



Title: Anti-Angiogenic Proteins and Fragments and Methods of Thereof iventors: Raghuram Kalluri



25 Mean Blood Vessels/Plug 20:-15 -10 5 0 PBS Canstatin Can-1 Can-2 FIG. 41